

Amendments to the Specification:

On page 6, please amend the paragraph starting on line 16 as shown below:

4. The modified thermostable DNA polymerase according to item 3 having the following physicochemical properties:
 - (1) DNA extension rate: at least 30 bases/second;
 - (2) thermostability: it is capable of retaining 40% or more DNA polymerase activity of untreated DNA polymerase at pH 8.8 (determined at 25°C) after treatment at 95°C for 6 hours; and
 - (3) amino acid sequence: in the DIETLYH sequence (SEQ ID NO:35) (D: aspartic acid, I: isoleucine, E: glutamic acid, T: threonine, L: leucine, Y: tyrosine, H: histidine) located at the 141- to 147-positions in the amino acid sequence of SEQ ID NO: 2, histidine(H) has been replaced by another amino acid.

On page 7, please amend the paragraph starting on line 4 as shown below:

5. The modified thermostable DNA polymerase according to item 4 having the following physicochemical properties:
 - (1) DNA extension rate: at least 30 bases/second;
 - (2) thermostability: it is capable of retaining 60% or more DNA polymerase activity of untreated DNA polymerase at pH 8.8 (determined at 25°C) after treatment at 95°C for 6 hours; and
 - (3) amino acid sequence: in the DIETLYH sequence (SEQ ID NO:35) (D: aspartic acid, I: isoleucine, E: glutamic acid, T: threonine, L: leucine, Y: tyrosine, H: histidine) located at the 141- to 147-positions in the amino acid sequence of SEQ ID NO: 2, histidine(H) has been replaced by another amino acid.

On page 9, please amend the paragraph starting on line 13 as set forth below:

15. The gene according to item 13 which encodes a modified thermostable DNA polymerase having the following physicochemical properties:

- (1) DNA extension rate: at least 30 bases/second;
- (2) thermostability: it is capable of retaining 40% or more DNA polymerase activity of untreated DNA polymerase at pH 8.8 (determined at 25°C) after treatment at 95°C for 6 hours; and
- (3) amino acid sequence: in the DIETLYH sequence (SEQ ID NO:35) (D: aspartic acid, I: isoleucine, E: glutamic acid, T: threonine, L: leucine, Y: tyrosine, H: histidine) located at the 141- to 147-positions in the amino acid sequence of SEQ ID NO: 2, histidine(H) has been replaced by another amino acid.

On page 10, please amend the paragraph starting on line 2 as shown below:

16. The gene according to item 13 which encodes a modified thermostable DNA polymerase having the following physicochemical properties:

- (1) DNA extension rate: at least 30 bases/second;
- (2) thermostability: it is capable of retaining 60% or more DNA polymerase activity of untreated DNA polymerase at pH 8.8 (determined at 25°C) after treatment at 95°C for 6 hours; and
- (3) amino acid sequence: in the DIETLYH sequence (SEQ ID NO:35) (D: aspartic acid, I: isoleucine, E: glutamic acid, T: threonine, L: leucine, Y: tyrosine, H: histidine) located at the 141- to 147-positions in the amino acid sequence of SEQ ID NO: 2, histidine(H) has been replaced by another amino acid.

On page 19, please amend the paragraph starting on line 21 as shown below:

An exemplary sequence of the DX₁EX₂X₃X₄H sequence is "DIETLYH" (SEQ ID NO:35). This sequence is perfectly preserved in thermostable DNA polymerases derived from Pyrococcus kodakaraensis KOD1 and Pyrococcus furiosus. Similarly, since the sequence in DNA polymerase derived from Thermococcus litoralis is "DIETFYH" (SEQ ID NO:36), the sequence "DIETLYH" (SEQ ID NO:35) is completely preserved except that L is replaced by F (FIG. 1).

Please amend the paragraph starting on page 26, line 8, as shown below:

A further embodiment of the present invention is a modified thermostable DNA polymerase having the following physicochemical properties:

- (1) DNA extension rate: at least 30 bases/second;
- (2) thermostability: it is capable of maintaining 60% or more residual activity at pH 8.8 (determined at 25°C) after heat treatment at 95°C for 6 hours (that is, it is capable of retaining 60% or more DNA polymerase activity of untreated DNA polymerase at pH 8.8 (determined at 25°C) after treatment at 95°C for 6 hours);
- (3) optimum temperature: about 65 to 75°C[[.]];
at any position other than the histidine site defined below in (5), one or more sugar chains may be deleted or added or one or more amino acids may be deleted, substituted, inserted or added[[.]];
at any position other than the histidine site defined below in (5), one or more sugar chains may be deleted or added or one or more amino acids may be deleted, substituted, inserted or added[[.]];
at any position other than the histidine site defined below in (5), one or more sugar chains may be deleted or added or one or more amino acids may be deleted, substituted, inserted or added[[.]];
at any position other than the histidine site defined below in (5), one or more sugar chains may be deleted or added or one or more amino acids may be deleted, substituted, inserted or added[[.]]];
- (4) molecular weight: about 89.97 kDa (calculated);
at any position other than the histidine site defined below in (5), one or more sugar chains may be deleted or added or one or more amino acids may be deleted, substituted, inserted or added[[.]]];
- (5) amino acid sequence: in the DIETLYH sequence (SEQ ID NO:35) (D: aspartic acid, I: isoleucine , E: glutamic acid, T: threonine, L: leucine, Y: tyrosine, H: histidine) located at the 141- to 147-positions in the amino acid sequence of SEQ ID NO: 2, histidine (H) has been replaced by another amino acid.